

OHIO SHALE



QUARTERLY ECONOMIC TRENDS FOR
OHIO OIL AND GAS INDUSTRIES

December 2013

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A Message from Director Dungey

Oil and gas drilling has only recently begun to accelerate in Ohio, but already many families and communities have begun to see a positive impact. As you'll see in the pages that follow, core shale-related employment, which includes such things as pipeline construction and well drilling, increased more than 30 percent from the first quarter of 2011 to the first quarter of 2013. Ancillary employment – for example, freight trucking and environmental consulting – also increased. The ripple effect on non-shale industries, such as food and retail businesses near drilling sites, also has been significant.

Ohio is fortunate to have this natural resource that can provide good jobs for families and reinvigorate many of our communities, especially those in the eastern part of the state. The average wages of shale-related jobs are excellent: \$74,382 in core industries and \$59,154 in ancillary industries. In both cases, this is higher than the average wage in all Ohio industries: \$44,367.

At the Ohio Department of Job and Family Services (ODJFS), we have been working hard to help more Ohioans take advantage of these opportunities. We've been working closely with local workforce investment areas, community colleges, other post-secondary educational institutions and employers to identify the occupations most in need of workers and to make sure that appropriate training programs are in place. In any given month, thousands of shale-related job openings are posted online, at www.ohiomeansjobs.com. The Ohio Board of Regents also provides an overview of shale-related employment opportunities and information about education and training at www.ohioenergypathways.org.

Individuals can sign up for on-the-job training opportunities at any of the state's local OhioMeansJobs Centers, which provide free job training and other services to Ohioans looking for work and employers looking for workers. Individuals can post their resumes, and employers can post job openings at www.ohiomeansjobs.com. We encourage any Ohioans in need of work or who may be considering new careers to explore these opportunities. We're committed to improving the well-being of Ohio's workforce and families, and are excited about the potential shale holds to make a significant difference in so many families' lives.

A handwritten signature in black ink that reads "Cynthia C. Dungey".

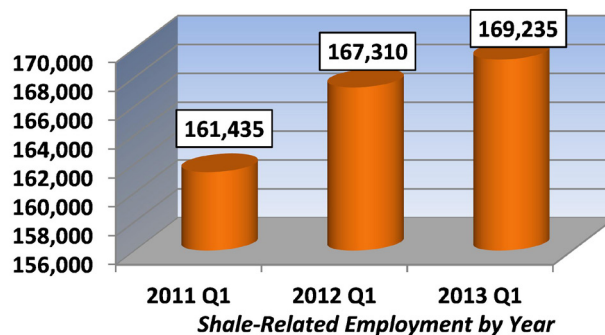
Cynthia C. Dungey, Director
Ohio Department of Job and Family Services



EXECUTIVE SUMMARY

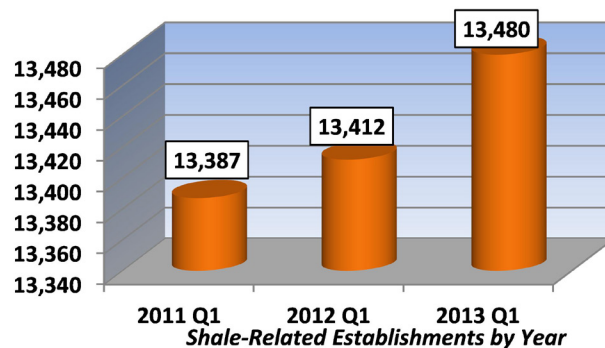
Employment (2011 Q1 to 2013 Q1)

- Core shale-related industry employment (such as pipeline construction and well drilling) was up 1,929 (30.8 percent).
- Ancillary shale-related industry employment (such as freight trucking and environmental consulting) increased 5,871 (3.8 percent).
- All industry employment was up 137,743 (2.8 percent).



Business Establishments (2011 Q1 to 2013 Q1)

- There were 111 core shale-related business establishments added (19 percent).
- Ancillary shale-related industries declined by 18 establishments (-0.1 percent).
- Over the same time period, Ohio experienced a slight decline of 0.2 percent in business establishments in all industries.
- Shale-related business establishments totaled 13,480 during the first quarter of 2013.



Wages (2012 Q2 through 2013 Q1)

- The average wage across all industries was \$44,367.
- The average wage in core shale-related industries was \$74,382, which was \$30,015 greater than the average for all industries.
- The average wage in ancillary shale-related industries was \$59,154, which was \$14,787 greater than the average for all industries.

Stable Employment, All Hires and Separations (2011 Q3 to 2012 Q3)

- Stable jobs, those present at the beginning and end of a quarter, increased in all core shale-related industries: oil and gas extraction, support activities for mining, pipeline transportation of natural gas, and utility system construction.

Online Job Postings (2013 Q3)

- There were 5,086 online job postings statewide in core and ancillary shale-related industries.

These data are meant to provide a barometer of shale-related economic activity and employment trends. While the vast majority of shale-related employment can be found in certain industries, not all business establishments in those industries are involved in shale activity. For those that are, not all of their products and services and, therefore, their employment, are necessarily linked to shale-related economic activity.

BACKGROUND INFORMATION

Data Sources

The purpose of this quarterly publication is to provide the most current available data on shale-related economic activity in Ohio as compared to the base year of 2011. Although several data sources are cited in this publication, the primary source is the Quarterly Census of Employment and Wages (QCEW).

The QCEW program derives its data from quarterly tax reports of employers subject to state and federal unemployment insurance laws. This includes 95 percent or more of all wage and salary employment in Ohio. Under the QCEW program, employment data represent the number of covered workers who worked during, or received pay for, the pay period including the 12th of the month. Excluded are members of the armed forces, the self-employed, unpaid family workers and railroad workers covered by the railroad unemployment insurance system. Data is published approximately six months after the quarter ends.

Also included in this publication are several additional data sources that capture Ohio's most current overall economic situation (Local Area Unemployment Statistics and Current Employment Statistics), employer demand (The Conference Board Help Wanted OnLine™ Data Set) and hiring activity (Quarterly Workforce Indicators). For an explanation of all data sources, please refer to the "Definitions" section on page 18.

In this edition, most current data from the QCEW program are for the first quarter of 2013. Because the data are not seasonally adjusted, the same quarter of a given year must be used when analyzing growth over time. This will ensure that seasonal factors are not influencing employment change. Therefore, first quarter 2013 QCEW data are compared to first quarter 2011 QCEW data.

Data Limitations

The North American Industry Classification System (NAICS) was used to define shale-related industries. Much of the information included in this publication reflects data on a group of six industries identified as "core" and a group of 30 industries identified as "ancillary." These data are meant to provide a barometer of shale-related economic activity and employment trends. While the vast majority of shale-related employment can be found in these industries, not all business establishments in these industries are involved in shale activity. For those that are, not all of their products and services and, therefore, their employment are necessarily linked to shale-related economic activity. This is particularly true for the ancillary industries.

The data in this publication include government employment (federal, state and local) in all shale-related industries because significant non-private employment is present in a number of these industries, most notably: highway, street and bridge construction; engineering services; water supply and irrigation systems; and sewage treatment facilities.

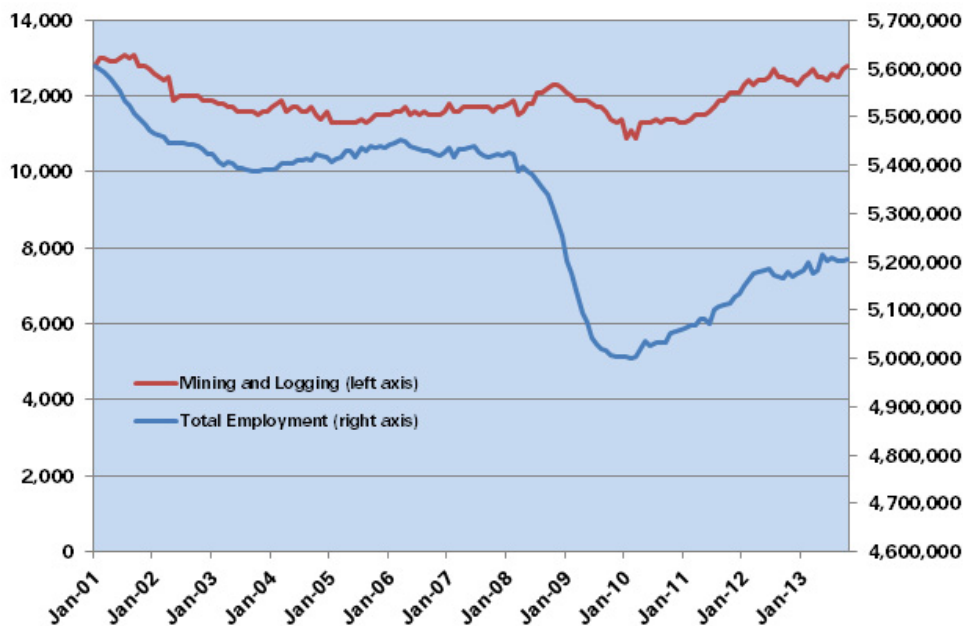
As shale-related activity develops further in Ohio, additional industries may be added to the ancillary group, based on such factors as significant employment gains in an industry in a geographic region or the identification of a group of companies in the same industry involved in shale-related activity.

Snapshot of Ohio's Economy

- **Ohio's seasonally adjusted unemployment rate for October 2013 was 7.5 percent.**
 - The rate was 0.6 percentage points higher than the October 2012 rate.
- **Ohio had 5,204,800 seasonally adjusted nonfarm jobs in October 2013.**
 - Compared to October 2012, employment increased by 27,200 jobs.
- **Ohio's hiring activity decreased from the third quarter of 2011 to the third quarter of 2012.**
 - Across all industries, an estimated 792,387 workers started new jobs (new hires and rehires) during the third quarter of 2012, a decrease of 17,465 hires over the second quarter of 2011.
- **Employer demand increased in Ohio.**
 - 418,973 job ads were posted online in third quarter 2013, an increase of 19,494 from third quarter 2012.
- **Ohio's supply/demand rate, which is the ratio of the number of unemployed people to advertised job vacancies, is slightly lower than the U.S. rate (The Conference Board).**
 - The August Ohio supply/demand rate was 2.16, which was just below the U.S. rate (2.17).

Mining and Logging Jobs vs. Total Jobs in Ohio

Total Mining and Logging Employment since January 2001 (Seasonally Adjusted)



Source: Current Employment Statistics. Estimates may be revised.

- **In October 2013, 12,800 workers were employed in the mining and logging industries.**
 - From October 2012 to October 2013, employment increased by a total of 400 jobs.

STATEWIDE SHALE-RELATED INDUSTRIES

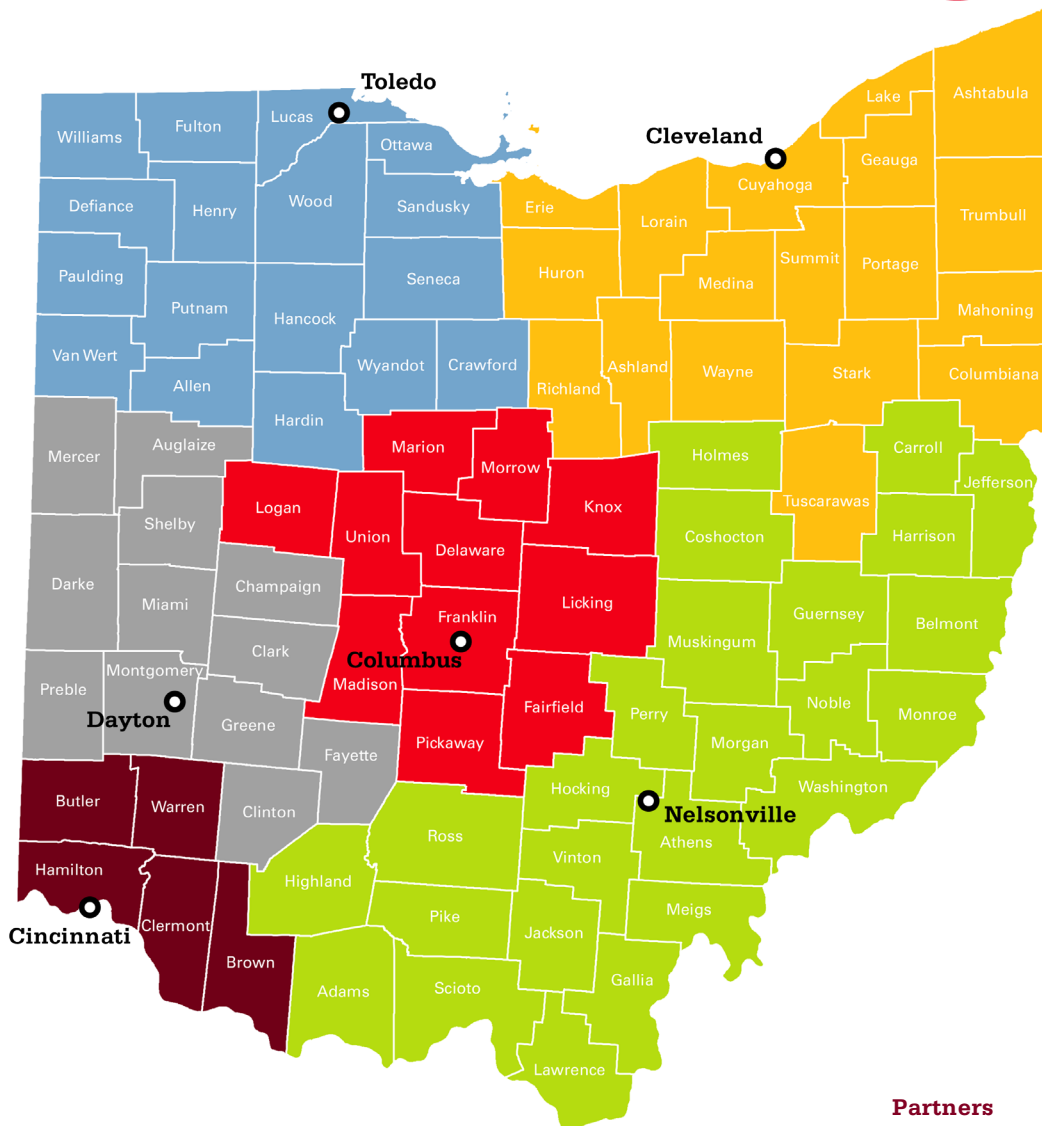
Number of Business Establishments and Employment in Shale-Related Industries (2011 Q1-2013 Q1)

Core Industries		2011 Q1		2013 Q1		Change	
NAICS	Title	Estab.	Empl.	Estab.	Empl.	Estab.	Empl.
211111	Crude petroleum and natural gas extraction	193	2,749	205	1,557	12	-1,192
211112	Natural gas liquid extraction	4	26	16	272	12	246
213111	Drilling oil and gas wells	78	516	94	753	16	237
213112	Support activities for oil and gas operations	179	1,165	221	2,205	42	1,040
237120	Oil and gas pipeline construction	94	1,498	123	3,085	29	1,587
486210	Pipeline transportation of natural gas	37	309	37	320	0	11
Core Industry Totals		585	6,263	696	8,192	111	1,929
Ancillary Industries		2011 Q1		2013 Q1		Change	
NAICS	Title	Estab.	Empl.	Estab.	Empl.	Estab.	Empl.
221112	Fossil fuel electric power generation	83	5,326	73	4,368	-10	-958
221210	Natural gas distribution	141	3,697	145	4,066	4	369
221310	Water supply and irrigation systems	247	6,007	256	5,869	9	-138
221320	Sewage treatment facilities	212	3,820	207	3,815	-5	-5
237110	Water and sewer system construction	394	4,167	366	4,227	-28	60
237310	Highway, street, and bridge construction	721	10,906	731	11,708	10	802
238912	Nonresidential site preparation contractors	629	4,318	590	4,397	-39	79
325110	Petrochemical manufacturing	5	358	5	312	0	-46
325120	Industrial gas manufacturing	45	737	42	749	-3	12
331110	Iron and steel mills and ferroalloy manufacturing	58	9,797	59	9,284	1	-513
331210	Iron, steel pipe and tube from purchase steel	52	3,051	40	3,262	-12	211
333131	Mining machinery and equipment manufacturing	12	451	11	462	-1	11
333132	Oil and gas field machinery and equipment	6	141	11	355	5	214
423810	Construction equipment merchant wholesalers	195	2,419	193	3,247	-2	828
423830	Industrial machinery merchant wholesalers	1,695	15,107	1,628	16,163	-67	1,056
423840	Industrial supplies merchant wholesalers	503	4,678	495	4,681	-8	3
484110	General freight trucking, local	1,346	11,667	1,353	12,172	7	505
484220	Other specialized trucking, local	1,004	6,057	1,023	6,469	19	412
484230	Other specialized trucking, long-distance	283	4,412	312	5,209	29	797
531190	Lessors of other real estate property	301	858	276	806	-25	-52
532412	Other heavy machinery rental and leasing	165	1,231	178	1,805	13	574
541330	Engineering services	2,247	26,920	2,311	27,566	64	646
541360	Geophysical surveying and mapping services	53	246	57	245	4	-1
541380	Testing laboratories	359	6,379	361	5,901	2	-478
541620	Environmental consulting services	291	1,528	312	1,685	21	157
562910	Remediation services	170	2,222	206	3,637	36	1,415
811310	Commercial machinery repair and maintenance	1,111	7,014	1,080	7,563	-31	549
924110	Air, water, and waste program administration	164	6,089	159	5,909	-5	-180
924120	Administration of conservation programs	281	5,081	274	4,662	-7	-419
926130	Utility regulation and administration	29	488	30	449	1	-39
Ancillary Industry Totals		12,802	155,172	12,784	161,043	-18	5,871
Core Industries and Ancillary Industries Totals		13,387	161,435	13,480	169,235	93	7,800

Source: Quarterly Census of Employment and Wages.

- From 2011 Q1 to 2013 Q1, employment in core industries increased by 1,929 (30.8 percent). Over the same period, employment in ancillary industries increased by 5,781 (3.8 percent).
- From 2011 Q1 to 2013 Q1, the number of business establishments in the core industries grew by 111 (19.0 percent), while establishments in ancillary industries declined by 18 (-0.1 percent).

JOB SOHIO NETWORK



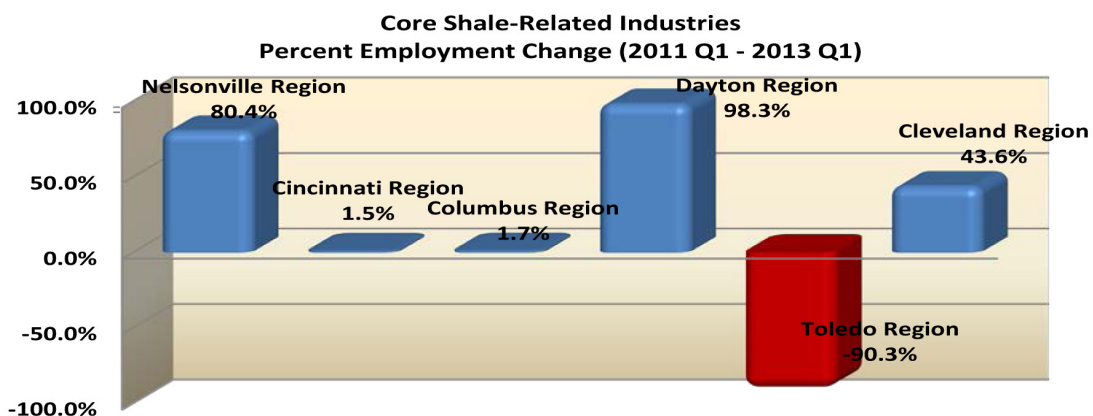
Partners

- Appalachian Partnership for Economic Growth
- Cincinnati USA Partnership
- Columbus 2020!
- Dayton Development Coalition
- Regional Growth Partnership
- Team NEO

REGIONAL SHALE-RELATED INDUSTRIES

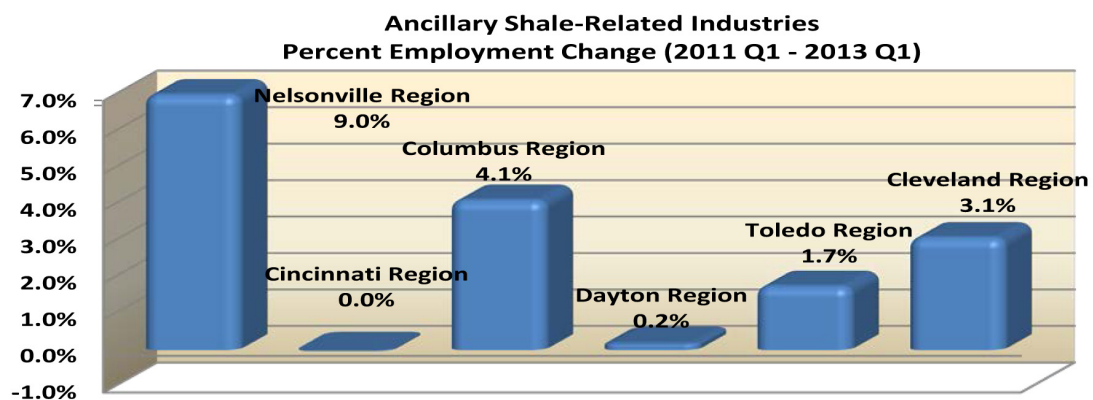
The JobsOhio Network is a partnership of statewide economic development organizations with deep ties to their business communities. The following charts show trends in shale-related employment for each of the six JobsOhio regions.

Large percent increases and decreases in employment may be the result of a change in industry classification following a routine NAICS assignment review. Changes in NAICS assignment are typically done with the publication of first quarter data.



Source: Quarterly Census of Employment and Wages.

- For the core shale-related industries, the largest percent growth in employment was in the Dayton region (98.3 percent), followed by the Nelsonville region (80.4 percent).



Source: Quarterly Census of Employment and Wages.

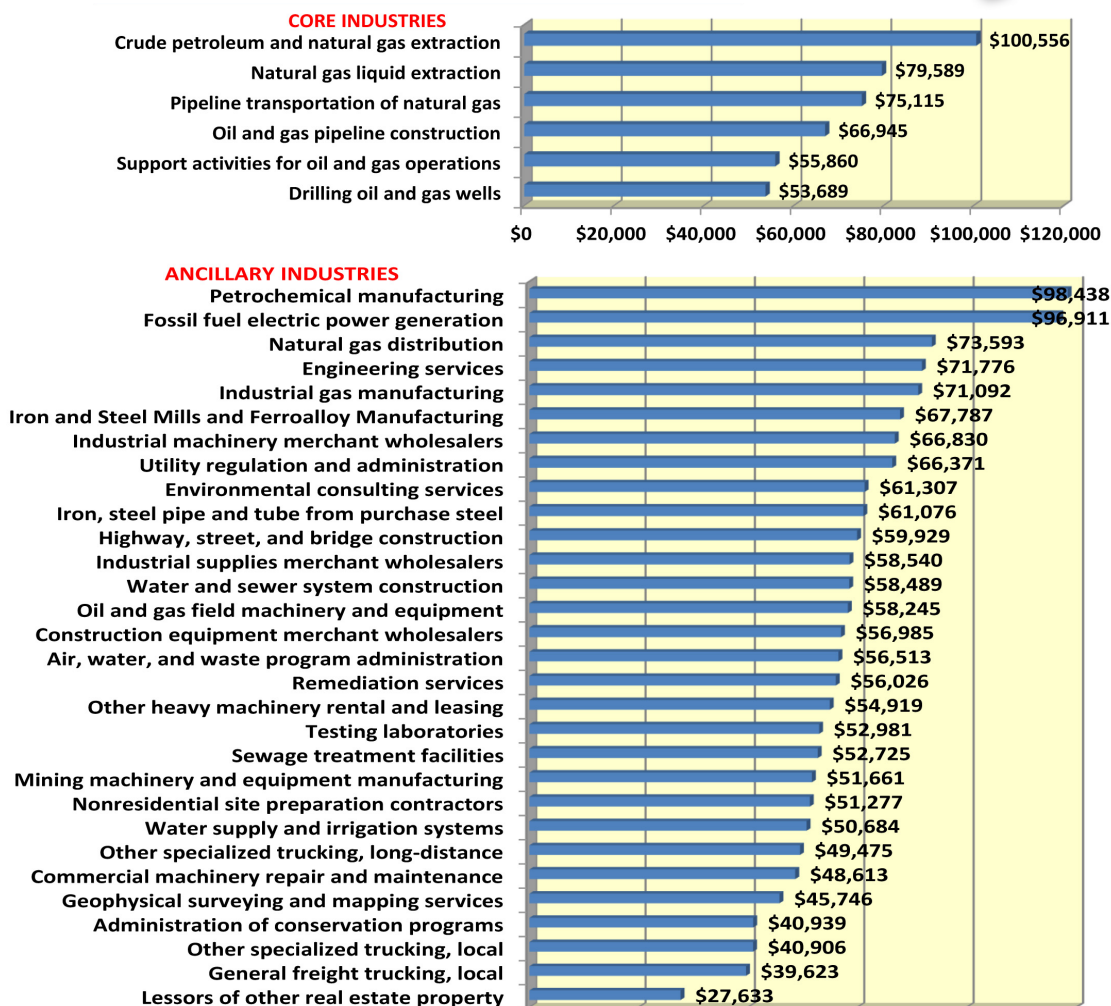
- For the ancillary shale-related industries, the largest percent growth in employment was in the Nelsonville region (9.0 percent), followed by the Columbus region (4.1 percent).

WAGES FOR OHIO SHALE-RELATED CORE AND ANCILLARY INDUSTRIES

- The average wage across all industries for 2012 Q2 through 2013 Q1 was \$44,367.
- The average wage in the core industries was \$30,015 greater than the average wage for all industries.
- The average wage in the ancillary industries was approximately \$14,787 higher than the average wage for all industries.



Average Wage by Industry



Source: Quarterly Census of Employment and Wages.

OHIO SHALE-RELATED ONLINE JOB POSTINGS

Ohio Statewide Online Job Postings

	2012 Q3	2013 Q3	% Change
Core Industries	136	187	37.5%
Ancillary Industries	4,713	4,899	3.9%
Total: ALL Industries	399,479	418,973	4.9%

JobsOhio Network Region Online Job Postings

Core & Ancillary Combined	2012 Q3	2013 Q3	% Change
Cincinnati Region (SW Ohio)	894	843	-5.7%
Cleveland Region (NE Ohio)	1,516	1,534	1.2%
Columbus Region (Central Ohio)	850	1,020	20.0%
Dayton Region (West Ohio)	667	660	-1.0%
Nelsonville Region (SE Ohio)	193	269	39.4%
Toledo Region (NW Ohio)	372	444	19.4%
Total*	4,854	5,094	4.9%

Source: The Conference Board Help Wanted Online® (HWOL). Data subject to revision. Not seasonally adjusted.

Data are not comparable to previous *Ohio Shale Quarterly Economic Trends for Ohio Oil and Gas Industries* reports due to HWOL 2013 methodological revisions.

**The total includes job ads that may have listed Ohio as the only geographical area. As a result, the sum of the job ads for the JobsOhio Regions may be lower, since it does not include these ads without a city or metropolitan statistical area specification.*

Ohio Online Job Postings

- Total job postings across all industries for Ohio were 4.9 percent higher in third quarter 2013 than in third quarter 2012.
- Overall, job postings increased in both core and ancillary shale-related industries (37.5 and 3.9 percent, respectively).

JobsOhio Network Regional Online Job Postings

- Job postings increased in the Nelsonville (39.4 percent), Columbus (20.0 percent), Toledo (19.4 percent) and Cleveland regions (1.2 percent) in third quarter 2013 when compared to third quarter 2012.

WELL ACTIVITY STATUS AS OF NOVEMBER 9, 2013

HORIZONTAL OIL AND GAS WELLS IN THE UTICA/POINT PLEASANT AND MARCELLUS FORMATIONS

OHIO DEPARTMENT OF NATURAL RESOURCES
2013

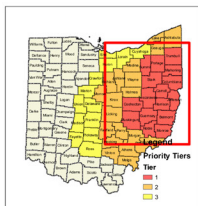
ODNR OFFICE OF INFORMATION TECHNOLOGY
November, 2013

Horizontal Wells Activity Status at end of Saturday 11/09/2013:

Wells Permitted To Date:
Utica: 979
Marcellus: 35

Wells Drilled To Date:
Utica: 601
Marcellus: 18

Wells Producing To Date:
Utica: 180
Marcellus: 7



Projection is Ohio state plane coordinate system, south zone
North American Datum 1983.

- Utica/Point Pleasant Well Heads
- Marcellus Well Heads
- Horizontal Wellbores

Utica/Point Pleasant Bottom Hole

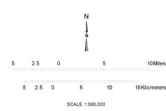
- PERMITTED-Permitted, Not Drilled; Cancelled
- DRILLED-Drilling, Well Drilled
- PRODUCING-Producing, Plugged Back
- INACTIVE-Drilled Inactive; Shut In
- PLUGGED-Lost Hole
- PLUGGED-Dry and Abandoned
- PLUGGED-Plugged and Abandoned

Marcellus Bottom Hole

- PERMITTED-Permitted, Not Drilled; Cancelled
- DRILLED-Drilling, Well Drilled
- PRODUCING-Producing, Plugged Back
- Inactive

ODNR Lands

- Division of Forestry
- Department
- Division of Parks
- Division of Watercraft
- Division of Wildlife
- Natural Areas and Preserves



Date Issued: The ODNR Division of Oil and Gas Resources provided the Well data from REDMI. The ODNR Division of Geological Survey provided the S-SUB1-SUB2 data. The ODNR Office of Information Technology provided the ODNR lands data. The NaturalAreas.gov provided the federal lands. Ohio Department of Transportation provided the city boundaries, roads, and lake data.

STATEWIDE HIGH-PRIORITY OCCUPATIONS RELATED TO SHALE-RELATED INDUSTRIES

The occupations listed in the table below and on the next page are found in shale-related core and ancillary industries and have been identified as high-priority occupations. High-priority occupations are identified as in demand by employers, have higher skills needs and are most likely to provide family-sustaining wages.

A standard occupation classification (SOC) code is provided for each occupation. For a complete list of terms, please refer to the Staffing Patterns definition on page 19.

SOC Code	SOC Title	Average Median Wage	Typical Education Level
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$22,580	Short-Term OJT
43-9061	Office Clerks, General	\$27,550	Short-Term OJT
43-3021	Billing and Posting Clerks	\$32,260	Short-Term OJT
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$38,200	Short-Term OJT
43-4051	Customer Service Representatives	\$30,520	Moderate-Term OJT
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$31,210	Moderate-Term OJT
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$34,290	Moderate-Term OJT
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$34,550	Moderate-Term OJT
47-2061	Construction Laborers	\$35,660	Moderate-Term OJT
43-5061	Production, Planning, and Expediting Clerks	\$38,710	Moderate-Term OJT
47-2073	Operating Engineers and Other Construction Equipment Operators	\$44,430	Moderate-Term OJT
49-9052	Telecommunications Line Installers and Repairers	\$43,850	Long-Term OJT
49-9041	Industrial Machinery Mechanics	\$44,650	Long-Term OJT
47-2152	Plumbers, Pipefitters, and Steamfitters	\$47,140	Long-Term OJT
49-9051	Electrical Power-Line Installers and Repairers	\$60,740	Long-Term OJT
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	\$50,770	Related Work Exp.
51-1011	First-Line Supervisors of Production and Operating Workers	\$52,690	Related Work Exp.
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$57,110	Related Work Exp.
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$57,500	Related Work Exp.
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$67,130	Related Work Exp.
51-4121	Welders, Cutters, Solderers, and Brazers	\$35,300	Postsec. Voc. Award
13-1051	Cost Estimators	\$54,760	Bachelor's Degree
17-2112	Industrial Engineers	\$72,520	Bachelor's Degree

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics, May 2012.

(continued on the next page)

Statewide High-Priority Occupations Related to Shale-Related Industries

(continued from the previous page)

SOC Code	SOC Title	Average Median Wage	Typical Education Level
45-4022	Logging Equipment Operators	\$28,480	Moderate-Term OJT
47-5071	Roustabouts, Oil and Gas	\$28,610	Moderate-Term OJT
47-5012	Rotary Drill Operators, Oil and Gas	\$29,110	Moderate-Term OJT
47-5011	Derrick Operators, Oil and Gas	\$32,580	Moderate-Term OJT
53-7073	Wellhead Pumpers	\$33,020	Moderate-Term OJT
53-7072	Pump Operators, Except Wellhead Pumpers	\$44,960	Moderate-Term OJT
47-5013	Service Unit Operators, Oil, Gas, and Mining	\$45,410	Moderate-Term OJT
53-7071	Gas Compressor and Gas Pumping Station Operators	\$61,290	Moderate-Term OJT
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	\$43,430	Long-Term OJT
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	\$33,110	Postsec. Voc. Award
17-3025	Environmental Engineering Technicians	\$41,630	Associate's Degree
19-4041	Geological and Petroleum Technicians	\$51,520	Associate's Degree
17-3023	Electrical and Electronics Engineering Technicians	\$54,540	Associate's Degree
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	\$56,790	Bachelor's Degree
19-2042	Geoscientists, Except Hydrologists and Geographers	\$71,950	Master's Degree

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics, May 2012.

STATEWIDE SHALE-RELATED EMPLOYMENT DATA

The Quarterly Workforce Indicators (QWI) are a set of economic indicators derived from state administrative records and basic demographic information from the Census Bureau. They can be examined based on geography, industry, gender and age of workers. Data presented are the most recent available. Because QWI data are not seasonally adjusted, the same quarter must be used when analyzing changes over time. This will ensure that seasonal factors are not influencing employment change. Therefore, in the table below and on the following page, third quarter data from 2011 is presented with third quarter data from 2012.

The tables below and on the following page show Ohio shale-related employment. “Stable Employment” is an estimate of the number of jobs that were present at the beginning and end of a quarter. “All Hires” is the estimated number of workers who started a job during the quarter; it includes new and recalled employees. “Separations” is the estimated number of workers whose jobs with a given employer ended during a quarter.

Ohio	2011 Q3			2012 Q3		
	Stable	All Hires		Stable	All Hires	
All industry groups	4,324,166	809,852	819,051	4,354,436	792,387	839,791
2111 Oil and Gas Extraction	2,776	202	247	2,813	455	391
2131 Support Activities for Mining	2,692	845	617	3,025	895	795
2371 Utility System Construction	10,299	3,928	3,060	10,236	4,265	3,306
4862 Pipeline Transportation of Natural Gas	332	9	7	340	11	11

Source: U.S. Census Bureau, Quarterly Workforce Indicators.

Quarterly Workforce Indicators are only available at the 4-digit NAICS level. Consequently, although these industry groups contain some employment from non-shale related core industries, they provide an indication of labor activity for these shale-related industries.

- Stable jobs, those present at the beginning and end of a quarter, increased in all core shale-related industries from third quarter 2011 to third quarter 2012.
- It is also clear there is significant churn and turnover in the job market as demonstrated by the levels of hires and separations.

JOB OHIO NETWORK SHALE-RELATED EMPLOYMENT

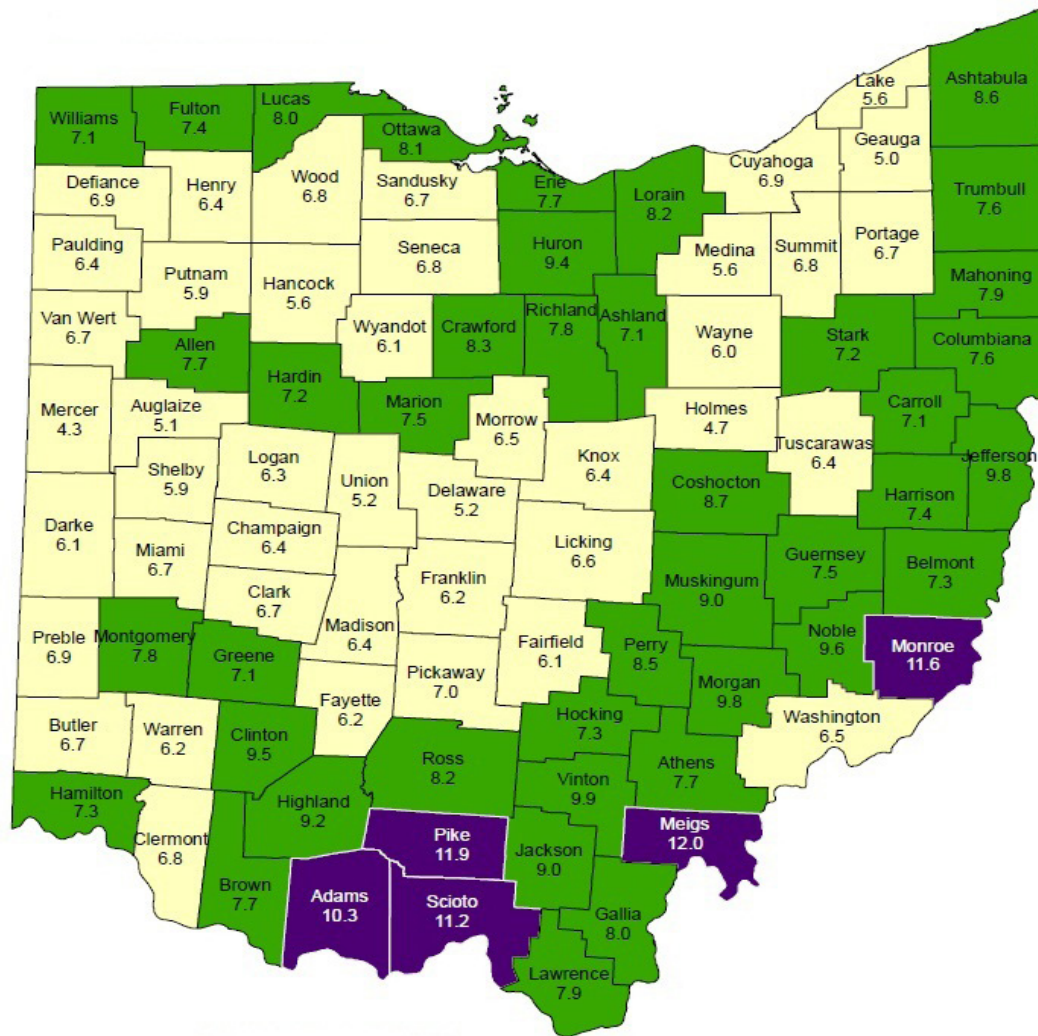
	2011 Q3			2012 Q3		
	Stable Employ.	All Hires	Separations	Stable Employ.	All Hires	Separations
Central Ohio - Columbus Region						
All industry groups	849,830	164,178	160,300	856,024	162,961	167,202
2111 Oil and Gas Extraction	164	19	20	164	74	43
2131 Support Activities for Mining	236	100	75	177	10	35
2371 Utility System Construction	1,915	540	460	2,039	641	691
4862 Pipeline Transportation of Natural Gas	88	0	0	14	0	0
Northwest Ohio-Toledo Region						
All industry groups	461,593	82,003	85,368	453,277	83,720	96,789
2111 Oil and Gas Extraction	0	0	0	0	0	0
2131 Support Activities for Mining	***	0	0	88	44	18
2371 Utility System Construction	1,362	967	822	1,322	1,169	566
4862 Pipeline Transportation of Natural Gas	***	0	0	***	0	0
Northeast Ohio - Cleveland Region						
All industry groups	1,643,748	313,189	319,459	1,675,545	304,147	324,927
2111 Oil and Gas Extraction	540	30	60	560	63	45
2131 Support Activities for Mining	615	141	89	737	205	155
2371 Utility System Construction	3,672	1,303	904	3,584	1,052	1,043
4862 Pipeline Transportation of Natural Gas	53	0	0	54	0	0
Southeast Ohio-Nelsonville Region						
All industry groups	267,027	49,793	50,281	264,828	47,540	49,409
2111 Oil and Gas Extraction	367	31	44	408	145	130
2131 Support Activities for Mining	1,620	528	393	1,770	454	451
2371 Utility System Construction	472	114	84	565	411	280
4862 Pipeline Transportation of Natural Gas	24	0	0	24	0	0
Southwest Ohio - Cincinnati Region						
All industry groups	668,474	122,646	128,754	673,293	120,994	124,384
2111 Oil and Gas Extraction	***	***	***	***	***	***
2131 Support Activities for Mining	25	0	3	66	85	56
2371 Utility System Construction	1,598	515	390	1,749	333	265
4862 Pipeline Transportation of Natural Gas	***	0	0	***	0	0
West Ohio - Dayton Region						
All industry groups	433,493	78,039	74,891	431,467	73,026	77,083
2111 Oil and Gas Extraction	***	0	0	***	***	***
2131 Support Activities for Mining	14	0	0	13	0	11
2371 Utility System Construction	680	151	125	745	220	193

Source: U.S. Census Bureau, Local Employment Dynamics, Quarterly Workforce Indicators.

***Indicates data cannot be disclosed due to confidentiality restrictions or data quality standards.

Quarterly Workforce Indicators are only available at the 4-digit NAICS level. Consequently, although these industry groups contain some employment from non-shale related core industries, they help provide an indication of labor activity for these shale-related industries.

COUNTY UNEMPLOYMENT RATES IN OCTOBER 2013 (Not seasonally adjusted)



Unemployment Rates

	Not Seasonally Adjusted	Seasonally Adjusted
United States	7.0%	7.3%
Ohio	7.0%	7.5%

Ohio rate of 7.0% or lower

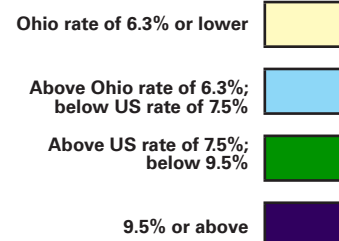
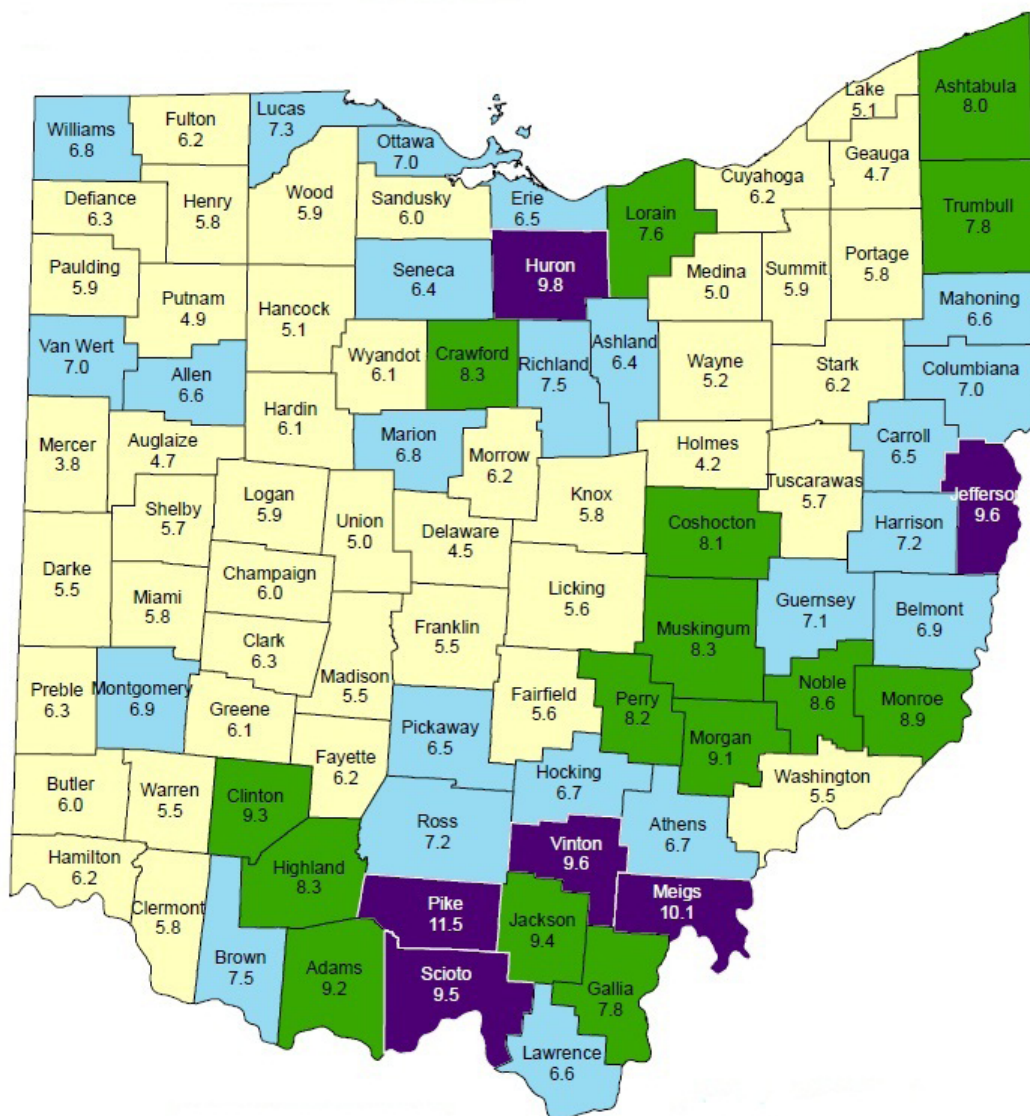
Above U.S. & Ohio rate of 7.0%; below 10.0%

10.0% or above

Source: Ohio Department of Job and Family Services
Office of Workforce Development
Bureau of Labor Market Information

*Data are preliminary and are subject to revision.

COUNTY UNEMPLOYMENT RATES IN OCTOBER 2012 (Not seasonally adjusted)



Unemployment Rates

	Not Seasonally Adjusted	Seasonally Adjusted
United States	7.5%	7.9%
Ohio	6.3%	6.9%

Source: Ohio Department of Job and Family Services
Office of Workforce Development
Bureau of Labor Market Information

*Data based on 2012 benchmark.

DEFINITIONS

OHIO LABOR FORCE STATISTICS*

Source: Ohio Department of Job and Family Services' Bureau of Labor Market Information, Local Area Unemployment Statistics (LAUS)

The labor force and unemployment data are based on the same concepts and definitions as those used for the official national estimates obtained from the Current Population Survey (CPS). The LAUS program measures employment and unemployment on a place-of-residence basis and produces estimates using equations based on regression techniques. This method uses data from several sources, including the CPS, the Current Employment Statistics (CES) program, and state unemployment insurance programs. The LAUS program does not produce estimates for any demographic groups.

Employment – A count of all persons who, during the week that includes the 12th day of the month, (a) did any work as paid employees, worked in their own businesses or professions or on their own farm, or worked 15 hours or more as unpaid workers in enterprises operated by members of their families, or (b) were not working but who had jobs from which they were temporarily absent. Each employed person is counted only once, even if the person holds more than one job. Included are the self-employed, unpaid family workers, agricultural workers and private household workers, who are excluded by the CES survey.

Labor Force – The population of people either working or looking for work, or classified as employed or unemployed.

Unemployment – A count of all persons aged 16 years and older who had no employment during the reference week (the week containing the 12th day of the month), who were available for work (except for temporary illness), and who had made specific efforts to find employment sometime during the four-week

period ending with the reference week. This includes those waiting to be recalled to jobs from which they had been laid off.

Unemployment Rate – The number of unemployed workers as a percent of the labor force.

JOBS*

Source: Ohio Department of Job and Family Services' Bureau of Labor Market Information, Current Employment Statistics

Each month the CES program surveys about 140,000 national businesses and government agencies to provide detailed industry data on employment, hours and earnings of workers on non-farm payrolls. This is a collaborative effort between the Bureau of Labor Statistics (BLS) and the states. CES produces a count of jobs, not of people.

Nonfarm Jobs – The total number of persons on established payrolls employed full- or part-time who received pay for any part of the pay period that includes the 12th day of the month. Temporary and intermittent employees are included, as are any employees who are on paid sick leave, on paid holiday, or who worked during only part of the specified pay period. A striking employee who works only a small portion of the survey period, and is paid, is included as employed. Those on payrolls of more than one establishment are counted in each establishment. Data exclude proprietors, self-employed workers, unpaid family or volunteer workers, farm workers, and domestic workers. Those on layoff, strike or leave without pay for the entire pay period, or who have not yet reported for work are not counted as employed. Government employment covers only civilian employees.

*THESE DATA ARE SEASONALLY ADJUSTED. Seasonal adjustment removes changes in employment due to normal seasonal hiring or layoffs (such as holidays, weather, etc.).

DEFINITIONS

QUARTERLY WORKFORCE INDICATORS

Source: U.S. Census Bureau

The Quarterly Workforce Indicators are data that can be examined by region, industry, gender and age of workers. These indicators are built upon wage records in the unemployment insurance system and information from state Quarterly Census of Employment and Wages (QCEW) data.

QUARTERLY CENSUS OF EMPLOYMENT AND WAGES

Source: Ohio Department of Job and Family Services' Bureau of Labor Market Information, Quarterly Census of Employment and Wages

Business Establishment – An establishment is the location of a certain economic activity, such as a factory, store, office or mine, which produces goods or services. It is typically at a single physical location and engaged in one, or predominantly one, type of economic activity. An employer may have one or more establishments.

Employment – Employment data include all employment covered under federal and Ohio unemployment insurance laws for each of the three months in a quarter. The employment count represents the number of full- and part-time employees who worked during or received pay for the payroll period including the 12th day of the month. The employment totals for each month are averaged for the quarter employment count. Those on paid vacations or paid sick leave are included. Workers temporarily earning no wages due to labor-management disputes, layoffs or other reasons are not reported as employed. Those on the payroll of more than one employer during the same reference week are reported more than once.

Wages – Wages include total compensation paid during a calendar quarter, including

bonuses. Average wages are calculated by dividing total wages for a quarter by average employment in that quarter.

STAFFING PATTERNS (High-Priority Occupations Section)

Source: Ohio Department of Job and Family Services' Bureau of Labor Market Information

A staffing pattern is a list of the occupations most commonly found within a particular industry. This information comes from the biennial Long-Term Occupational Employment Projections data.

Annual Median Wage – The annual median wage earned by workers in an occupation, assuming 40 hours of work per week, 52 weeks a year. Wage data is derived from the annual Occupational Employment Statistics survey.

Educational Attainment – BLS identifies 11 categories of educational attainment, for use in career planning. These categories describe the most significant postsecondary education or training pathways to employment for workers in a given occupation.

Educational Attainment Levels

- **Associate's degree** – Degree completed after two years of full-time schooling beyond high school
- **Bachelor's degree** – Degree completed after four years of full-time schooling beyond high school
- **Degree plus experience** – A four-year bachelor's degree plus work experience
- **Long-term training** – Knowledge and skills developed through years of On-the-Job-Training (OJT) or formal classroom instruction
- **Master's, doctoral or professional degree** – Degree earned at the college or university level beyond a four-year bachelor's degree

DEFINITIONS

- **Postsecondary award** – Certificate earned after training through a vocational training program
- **Related work experience** – Training gained through hands-on work in a similar occupation
- **Short-term or moderate-term OJT** – Basic tasks and skills learned through a period of OJT lasting up to one year

HELP WANTED ONLINE ADS

Source: The Conference Board Help Wanted OnLine™ Data Set

The Conference Board HWOL data set provides real-time insight into the employment marketplace through the world's largest database of online job ads. Jobs ads can be classified by industry, occupation, employer and geographic area. Data are analyzed for employment trends and to forecast economic conditions. The underlying data for The Conference Board HWOL are provided by Wanted Technologies Corporation.

NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) CHANGES

NAICS, established in 1997, is reviewed for potential revisions every five years. The latest revision, in 2012, was implemented by BLS in the QCEW program with the release of first quarter 2011 data. As part of this revision, the NAICS code of only one shale-related industry was impacted: NAICS 331111 (Iron & Steel Mills). The NAICS 2012 structure eliminated NAICS 331111, combining it with NAICS 331112 (Electrometallurgical ferroalloy product manufacturing) to form NAICS 331110 (Iron & Steel Mills and Ferroalloy Manufacturing).

Core Shale-Related Industries (NAICS):

Crude Petroleum & Natural Gas Extraction (211111); Natural Gas Liquid Extraction (211112); Drilling Oil & Gas Wells (213111); Support Activities for Oil & Gas Operations (213112); Oil & Gas Pipeline & Related Structures Construction

(237120); and Pipeline Transportation of Natural Gas (486210).

Ancillary Shale-Related Industries (NAICS):

Fossil Fuel Electric Power Generation (221112); Natural Gas Distribution (221210); Water Supply & Irrigation Systems (221310); Sewage Treatment Facilities (221320); Water & Sewer Line & Related Structures Construction (237110); Highway, Street, and Bridge Construction (237310); Nonresidential Site Preparation Contractors (238912); Petrochemical Manufacturing (325110); Industrial Gas Manufacturing (325120); Iron & Steel Mills & Ferroalloy Manufacturing (3311101); Iron & Steel Pipe & Tube Manufacturing from Purchased Steel (331210); Mining Machinery & Equipment Manufacturing (333131); Oil & Gas Field Machinery & Equipment Manufacturing (333132); Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers (423810); Industrial Machinery and Equipment Merchant Wholesalers (423830); Industrial Supplies Merchant Wholesalers (423840); General Freight Trucking, Local (484110); Specialized Freight Trucking, Local (484220); Specialized Freight Trucking, Long-Distance (484230); Lessors of Other Real Property (531190); Construction, Mining & Forestry Machinery & Equipment Rental & Leasing (532412); Engineering Services (541330); Geophysical Surveying & Mapping Services (541360); Testing Laboratories (541380); Environmental Consulting Services (541620); Remediation Services (562910); Commercial & Industrial Machinery & Equipment Repair & Maintenance (811310); Administration of Air and Water Resource and Solid Waste Management Programs (924110); Administration of Conservation Programs (924120); and Regulation and Administration of Communications, Electric, Gas, and Other Utilities (926130).

John R. Kasich, Governor
State of Ohio

Cynthia C. Dungey, Director
Ohio Department of Job and Family Services

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